UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,604	01/28/2004	Haixiang Liang	14541US02	5206

23446   7590   06/09/2008
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ART UNIT	PAPER NUMBER
2191	

MAIL DATE	DELIVERY MODE
06/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 February 2008</u>.
2a)☐ This action is **FINAL**.　　　2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>9-13 and 19-46</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>9-13 and 19-46</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This Office action is in response to the amendment filed on February 22, 2008.

2.   **Claims 9-13 and 19-46** are pending.

3.   **Claims 19, 32, and 45** have been amended.

4.   **Claims 1-8 and 14-18** have been cancelled.

5.   The objection to Claim 32 is withdrawn in view of Applicant's amendments to the claim.

6.   The 35 U.S.C. § 101 rejections of Claims 9-13 are maintained in view of Applicant's

arguments and further explained below.

7.   It is noted that Claim 29 contains a claim amendment. However, the claim still bears the

"Previously Presented" status identifier.

Response to Amendment

Claim Objections

8.   **Claim 29** is objected to because of the following informalities:

   • **Claim 29** contains a typographical error: A colon (:) should be added after the word

"wherein." Applicant is advised to make the correction in order to keep the grammatical

style consistent throughout the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making
and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
contemplated by the inventor of carrying out his invention.

10.   **Claim 45** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to reasonably convey to one skilled in the relevant art that the

inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 45 recites the limitation of the model of the modem comprises an actual hardware

component. The subject matter is not properly described in the application as filed, since the

specification only discloses that a playback device may include various components of the actual

communication device (*e.g.*, an ADSL modem) being modeled *(see Page 10, Paragraph [26])*.

The specification lacks disclosure on the model of the modem comprising any actual hardware

components. Because the specification does not adequately support the claimed subject matter, it

would not reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention.

11.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

12.   **Claim 45** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Claim 45 recites the limitation "the model of the modem comprises an actual hardware component." The claim is rendered indefinite because a model of a modem cannot possibly contain any actual hardware components. A model of a modem can only contain modeled versions of the actual hardware components of the modem. In the interest of compact prosecution, the Examiner subsequently does not give any patentable weight to this limitation for the purpose of further examination.

Claim Rejections - 35 USC § 101

13.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14.   **Claims 9-13** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 9-13 are directed to a modem. However, the recited components of the modem appear to lack the necessary physical components (hardware) to constitute a machine or manufacture under § 101. Therefore, these claim limitations can be reasonably interpreted as computer program modules—software *per se*. Furthermore, Figure 1 and its corresponding description in the specification provide no disclosure on the claimed elements "first input" and "second input" as being hardware components. In addition, the specification discloses that the recording module may include hardware, <u>software</u>, or a combination thereof (emphasis added)

(see Page 8, Paragraph [21]). The claims are directed to functional descriptive material *per se*,

and hence non-statutory.

The claims constitute computer programs representing computer listings *per se*. Such

descriptions or expressions of the programs are not physical "things." They are neither computer

components nor statutory processes, as they are not "acts" being performed. Such claimed

computer programs do not define any structural and functional interrelationships between the

computer program and other claimed elements of a computer, which permit the computer

program's functionality to be realized. In contrast, a claimed computer-readable medium

encoded with a computer program is a computer element, which defines structural and functional

interrelationships between the computer program and the rest of the computer, that permits the

computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at

1583-84, 32 USPQ2d at 1035.

Claim Rejections - 35 USC § 102

15.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

16.   **Claims 9-13 and 39-41** are rejected under 35 U.S.C. 102(e) as being anticipated by **US**

6,823,004 (hereinafter "Abdelilah").

As per **Claim 9**, <u>Abdelilah</u> discloses:

- a first input that operates to receive information from a first device that is utilizing the modem to communicate with a second device through a communication network *(see Column 7: 44-51, "The host system 300 is coupled to the modem 310 through a primary path 315 which supports communication services utilizing the modem 310. More particularly, communications from applications executed on the host system 300 are conveyed on the primary path 315 to the modem 310 for transmission through the port 320 which, in the illustrated embodiment, provides a connection to the Public Switched Telephone Network (PSTN).")*;

- a second input that operates to receive information from the second device through the communication network *(see Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.")*; and

- a recording module communicatively coupled to the first input and the second input that operates to cause input information arriving at one or both of the first input and the second input during real-time operation of the modem to be recorded for subsequent non-real-time analysis *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session*

supported by the primary path 315 to the modem 310.”; Column 9: 66 and 67 to Column 10:

105, “... the teachings of the present invention are particularly directed to environments in

which both a primary path and a secondary path are available to the DSP memory 345 to

provide for monitoring operations to occur in real time while a communication connection is

active through the modem.”; Column 13: 32-42, “In a preferred embodiment of the present

invention, the performance data is stored at block 445 in two separate text output files.”).

As per **Claim 10**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further

discloses:

- a command input that receives modem control commands from the first device, and

wherein the recording module further causes commands arriving at the command input during

real-time operation of the modem to be recorded for subsequent non-real-time analysis *(see*

Column 9: 33-37, “Performance information so obtained may include a variety of information

including ... call setup return codes (CSR CODE) such as those available on Microsoft

Corporation's AT code #UD (UniModem diagnostic command specification) ...”).

As per **Claim 11**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further

discloses:

- wherein the first device is a personal computer, and wherein the recording module

operates to cause the input information arriving at the first input from the personal computer and

arriving at the second input from the second device through the communication network, during

real-time operation of the modem, to be recorded on a memory device of the personal computer

(see Figure 3: 300; Column 7: 51-55, "Similarly, communications from a remote device by a

server modem (not shown) are received from the PSTN through port 320 and provided to a

destination application executing on the host system 300 by the modem 310."; Column 8: 15-20,

"The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360.

The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state

transitions made for one or more of the state machines of the modem 310 as will be described

further later herein.").

As per **Claim 12**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further

discloses:

-    wherein the recording module operates to cause input information arriving at the first

input from the first device and arriving at the second input from the second device through the

communication network to be communicated to a networked computer communicatively coupled

to the modem over the communication network and recorded on a memory device of the

networked computer *(see Column 8: 53-62, "Accordingly, in preferred embodiments of the*

present invention, modem performance is monitored by a host system 300 containing an internal

modem 310. Nonetheless, the benefits of the present invention may also be obtained in various

other embodiments including those in which the secondary path 335 does not return to the same

host as the primary path 315. A second host may be co-located or remote from the first host. In

fact, a remote second host could be at a distant location monitoring a modem connection

through the secondary path 335.").

As per **Claim 13**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further discloses:

- wherein the modem comprises an ADSL modem *(see Column 7: 60-63, "Similarly, when connected with a broadband network, the modem 310 may be a cable modem, an Asymmetric Digital Subscriber Line (ADSL) ...")*.

As per **Claim 39**, the rejection of **Claim 11** is incorporated; and <u>Abdelilah</u> further discloses:

- wherein the modem operates to cause the input information to be recorded on the memory device of the personal computer by, at least in part, being driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer *(see Column 4: 20-24, "One known approach to evaluating modem performance is the use of AT commands, such as those provided for by operating systems, such as Windows™ from Microsoft Corporation, for communicating with a modem (such as the #UD command).")*.

As per **Claim 40**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further discloses:

- wherein the recording module is integrated into an integrated circuit of the modem *(see Figure 3: 340, 345, 355, and 360)*.

As per **Claim 41**, the rejection of **Claim 9** is incorporated; and <u>Abdelilah</u> further discloses:

- wherein the recording module operates to cause the input information arriving at the first input and the second input during real-time operation of the modem to be recorded in exactly the same sequence as the input information is received at the modem *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session supported by the primary path 315 to the modem 310.")*.

Claim Rejections - 35 USC § 103

17.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18.   **Claims 19-38 and 42-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abdelilah** in view of **US 6,467,052 (hereinafter "Kaler")**.

As per **Claim 19**, <u>Abdelilah</u> discloses:

- a memory comprising input information that was recorded by a recording module

residing on a modem during real-time operation of the modem *(see Column 8: 15-20, "The DSP*

memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO

buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made

for one or more of the state machines of the modem 310 as will be described further later

herein."; Column 9: 66 and 67 to Column 10: 105, "... the teachings of the present invention are

particularly directed to environments in which both a primary path and a secondary path are

available to the DSP memory 345 to provide for monitoring operations to occur in real time

while a communication connection is active through the modem.").

However, <u>Abdelilah</u> does not disclose:

- a playback module communicatively coupled to the memory, the playback module

comprising a model of the modem that the playback module executes according to the input

information in the memory.

<u>Kaler</u> discloses:

- a playback module communicatively coupled to the memory, the playback module

comprising a model of an application that the playback module executes according to the input

information in the memory *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user*

interface features of an animated application model in an exemplary embodiment of the

invention. The user interface features are shown generally by reference number 400. In the UI

depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of

detail of a hierarchical model of the application.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

a playback module communicatively coupled to the memory, the playback module comprising a

model of the modem that the playback module executes according to the input information in the

memory. Note that Kaler also discloses that the invention has utility in analyzing the

performance of computer hardware *(see Column 3: 58-65)*. The modification would be obvious

because one of ordinary skill in the art would be motivated to observe and isolate undesirable

modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 20**, the rejection of **Claim 19** is incorporated; and Abdelilah further

discloses:

-   information from a computer coupled to the modem *(see Column 7: 44-51, "The host*

system 300 is coupled to the modem 310 through a primary path 315 which supports

communication services utilizing the modem 310."); and

-   information from a device with which the computer was communicating through a

communication network using the modem *(see Column 7: 51-55, "Similarly, communications*

from a remote device by a server modem (not shown) are received from the PSTN through port

320 and provided to a destination application executing on the host system 300 by the modem

310.").

As per **Claim 21**, the rejection of **Claim 19** is incorporated; and Abdelilah further

discloses:

- wherein the input information comprises data and modem control commands sent

from a computer to the modem *(see Column 9: 33-37, "Performance information so obtained*

may include a variety of information including ... call setup return codes (CSR CODE) such as

those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command

specification) ...").

As per **Claim 22**, the rejection of **Claim 19** is incorporated; however, <u>Abdelilah</u> does not

disclose:

- a debugging module communicatively coupled to the playback module that provides

for controlling and observing the operation of the playback module.

<u>Kaler</u> discloses:

- a debugging module communicatively coupled to the playback module that provides

for controlling and observing the operation of the playback module *(see Column 22: 50-67 to*

Column 23: 1-11, "Like any debugging tool, the VSA should ensure that the debuggability of the

system cannot become a security hole. Additionally, VSA debugging is a shared resource in a

distributed environment. As such, it is important that proper security precautions be taken to

prevent malicious users from obtaining this data.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Kaler</u> into the teaching of <u>Abdelilah</u> to include

a debugging module communicatively coupled to the playback module that provides for

controlling and observing the operation of the playback module. The modification would be

obvious because one of ordinary skill in the art would be motivated to observe and isolate

undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 23**, the rejection of **Claim 19** is incorporated; however, <u>Abdelilah</u> does not

disclose:

-   wherein the model of the modem comprises a bit-exact software model of the modem

that, when executed, produces results that are the same as an original modem that the bit-exact

software model is modeling.

<u>Kaler</u> discloses:

-   wherein the model of the modem comprises a bit-exact software model of the modem

that, when executed, produces results that are the same as an original modem that the bit-exact

software model is modeling *(see Column 32: 57-62, "As new diagram elements are identified,*

they are added to the user's screen 370."; Column 35: 36-47, "… so that in real time as an

application is being analyzed, one block will appear, then another, and then the interconnection

between the two blocks. Blocks are dynamically added, removed, and moved, and the

interconnections between them are dynamically changed to reflect changing conditions in the

execution of the application. The diagram is kept up to date with what is really happening.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Kaler</u> into the teaching of <u>Abdelilah</u> to include

wherein the model of the modem comprises a bit-exact software model of the modem that, when

executed, produces results that are the same as an original modem that the bit-exact software

model is modeling. The modification would be obvious because one of ordinary skill in the art

would be motivated to observe and isolate undesirable modem performance and behavior *(see*

Kaler – Column 1: 33-36).

As per **Claim 24**, the rejection of **Claim 19** is incorporated; and Abdelilah further

discloses:

- a computer communicatively coupled to the modem, and wherein the memory is a

memory device of the computer *(see Figure 3: 300, 310, and 315).*

As per **Claim 25**, the rejection of **Claim 24** is incorporated; however, Abdelilah does not

disclose:

- wherein the computer comprises the playback module.

Kaler discloses:

- wherein the computer comprises the playback module *(see Figure 14; Column 33:*

15-20, "FIG. 14 illustrates various user interface features of an animated application model in

an exemplary embodiment of the invention. The user interface features are shown generally by

reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different

blocks representing varying levels of detail of a hierarchical model of the application.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

wherein the computer comprises the playback module. The modification would be obvious

because one of ordinary skill in the art would be motivated to observe and isolate undesirable

modem performance and behavior *(see Kaler – Column 1: 33-36).*

As per **Claim 26**, the rejection of **Claim 19** is incorporated; and <u>Abdelilah</u> further

discloses:

- a networked computer communicatively coupled to the modem over a computer

network, and wherein the networked computer comprises the memory *(see Column 8: 53-62,*

"Accordingly, in preferred embodiments of the present invention, modem performance is

monitored by a host system 300 containing an internal modem 310. Nonetheless, the benefits of

the present invention may also be obtained in various other embodiments including those in

which the secondary path 335 does not return to the same host as the primary path 315. A

second host may be co-located or remote from the first host. In fact, a remote second host could

be at a distant location monitoring a modem connection through the secondary path 335.").

As per **Claim 27**, <u>Abdelilah</u> discloses:

- operating the modem in real-time to communicatively couple the first device and the

second device, the modem comprising a recording module *(see Column 7: 44-51, "The host*

system 300 is coupled to the modem 310 through a primary path 315 which supports

communication services utilizing the modem 310. More particularly, communications from

applications executed on the host system 300 are conveyed on the primary path 315 to the

modem 310 for transmission through the port 320 which, in the illustrated embodiment, provides

a connection to the Public Switched Telephone Network (PSTN)."; Column 8: 15-20, "The DSP

memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO

buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made

for one or more of the state machines of the modem 310 as will be described further later

herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the

host system 300 to access the DSP memory 345 to obtain data related to performance of the

modem 310 during an active communication session supported by the primary path 315 to the

modem 310."; Column 9: 66 and 67 to Column 10: 105, "... the teachings of the present

invention are particularly directed to environments in which both a primary path and a

secondary path are available to the DSP memory 345 to provide for monitoring operations to

occur in real time while a communication connection is active through the modem."); and

- while operating the modem in real-time, utilizing the recording module to cause the

recording of input information input to at least the first and/or second inputs of the modem *(see*

Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO)

buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to

record state transitions made for one or more of the state machines of the modem 310 as will be

described further later herein." and 28-33, "... while the secondary path 335 through the bus

interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to

performance of the modem 310 during an active communication session supported by the

primary path 315 to the modem 310.").

However, Abdelilah does not disclose:

- after operating the modem in real-time, executing a model of the modem, where the

model is responsive to the recorded input information.

Kaler discloses:

- after operating an application in real-time, executing a model of the application,

where the application is responsive to the recorded input information *(see Figure 14; Column 33:*

15-20, "FIG. 14 illustrates various user interface features of an animated application model in

an exemplary embodiment of the invention. The user interface features are shown generally by

reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different

blocks representing varying levels of detail of a hierarchical model of the application.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

after operating the modem in real-time, executing a model of the modem, where the model is

responsive to the recorded input information. Note that Kaler also discloses that the invention

has utility in analyzing the performance of computer hardware *(see Column 3: 58-65)*. The

modification would be obvious because one of ordinary skill in the art would be motivated to

observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-*

36).

As per **Claim 28**, the rejection of **Claim 27** is incorporated; and Abdelilah further

discloses:

- the first device comprises a personal computer *(see Figure 3: 300)*; and

- utilizing the recording module comprises utilizing the recording module to cause the

recording of the input information input to at least the first and second inputs of the modem to a

memory device of the personal computer *(see Column 8: 15-20, "The DSP memory 345 further*

includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360

implemented in the DSP memory 345 are used to record state transitions made for one or more

of the state machines of the modem 310 as will be described further later herein." and 28-33,

"... while the secondary path 335 through the bus interface 325 allows the host system 300 to

access the DSP memory 345 to obtain data related to performance of the modem 310 during an

active communication session supported by the primary path 315 to the modem 310.").

As per **Claim 29,** the rejection of **Claim 28** is incorporated; and <u>Abdelilah</u> further

discloses:

- operating the modem comprises driving the modem as an operating system device

driver on the personal computer *(see Column 4: 20-24, "One known approach to evaluating*

modem performance is the use of AT commands, such as those provided for by operating

systems, such as Windows™ from Microsoft Corporation, for communicating with a modem

(such as the #UD command).").

As per **Claim 30,** the rejection of **Claim 27** is incorporated; and <u>Abdelilah</u> further

discloses:

- the second device is a computer *(see Column 7: 51-55, "Similarly, communications*

from a remote device by a server modem (not shown) are received from the PSTN through port

320 and provided to a destination application executing on the host system 300 by the modem

310."); and

- utilizing the recording module comprises utilizing the recording module to cause the

recording of the input information to a memory device of the computer *(see Column 8: 15-20,*

"The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360.

The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state

transitions made for one or more of the state machines of the modem 310 as will be described

further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325

allows the host system 300 to access the DSP memory 345 to obtain data related to performance

of the modem 310 during an active communication session supported by the primary path 315 to

the modem 310.").

As per **Claim 31**, the rejection of **Claim 30** is incorporated; and <u>Abdelilah</u> further

discloses:

- wherein utilizing the recording module of the modem comprises executing a

recording application program on the computer *(see Column 8: 15-20, "The DSP memory 345*

further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355,

360 implemented in the DSP memory 345 are used to record state transitions made for one or

more of the state machines of the modem 310 as will be described further later herein.").

As per **Claim 32**, the rejection of **Claim 27** is incorporated; and <u>Abdelilah</u> further

discloses:

- the first device is a personal computer *(see Figure 3: 300)*; and

- utilizing the recording module to cause the recording of input information input to at

least the first and/or second inputs of the modem comprises utilizing the recording module to

cause the recording of input information *(see Column 8: 15-20, "The DSP memory 345 further*

includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360

implemented in the DSP memory 345 are used to record state transitions made for one or more

of the state machines of the modem 310 as will be described further later herein." and 28-33,

"... while the secondary path 335 through the bus interface 325 allows the host system 300 to

access the DSP memory 345 to obtain data related to performance of the modem 310 during an

active communication session supported by the primary path 315 to the modem 310.")
comprising:

- data input to the first input from the personal computer *(see Column 7: 44-51,*

"The host system 300 is coupled to the modem 310 through a primary path 315 which supports

communication services utilizing the modem 310.");

- commands input to a command input of the modem from the personal computer

(see Column 9: 33-37, "Performance information so obtained may include a variety of

information including ... call setup return codes (CSR CODE) such as those available on

Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) ..."); and

- samples input to the second input from the second device through the

communication network *(see Column 7: 51-55, "Similarly, communications from a remote*

device by a server modem (not shown) are received from the PSTN through port 320 and

provided to a destination application executing on the host system 300 by the modem 310.").

As per **Claim 33**, the rejection of **Claim 27** is incorporated; however, <u>Abdelilah</u> does not

disclose:

- wherein executing the model of the modem comprises executing a software model of the modem, and the method further comprises reading the recorded input information into the software model.

Kaler discloses:

- wherein executing the model of the modem comprises executing a software model of the modem, and the method further comprises reading the recorded input information into the software model *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include wherein executing the model of the modem comprises executing a software model of the modem, and the method further comprises reading the recorded input information into the software model. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 34**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- wherein executing the model of the modem comprises executing a bit-exact software model of the modem.

Kaler discloses:

- wherein executing the model of the modem comprises executing a bit-exact software model of the modem *(see Column 32: 57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include wherein executing the model of the modem comprises executing a bit-exact software model of the modem. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 35**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- the model of the modem comprises a software component that is the same as a software component of the modem; and

- executing the model of the modem comprises executing the software component.

Kaler discloses:

- the model of the modem comprises a software component that is the same as a

software component of the modem *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates*

various user interface features of an animated application model in an exemplary embodiment of

the invention. The user interface features are shown generally by reference number 400. In the

UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying

levels of detail of a hierarchical model of the application."); and

- executing the model of the modem comprises executing the software component *(see*

Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will

appear, then another, and then the interconnection between the two blocks. Blocks are

dynamically added, removed, and moved, and the interconnections between them are

dynamically changed to reflect changing conditions in the execution of the application. The

diagram is kept up to date with what is really happening.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

the model of the modem comprises a software component that is the same as a software

component of the modem; and executing the model of the modem comprises executing the

software component. The modification would be obvious because one of ordinary skill in the art

would be motivated to observe and isolate undesirable modem performance and behavior *(see*

Kaler – Column 1: 33-36).

As per **Claim 36**, the rejection of **Claim 27** is incorporated; however, <u>Abdelilah</u> does not disclose:

- the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and

- executing the model of the modem comprises utilizing the hardware component.

<u>Kaler</u> discloses:

- the model of the modem comprises a hardware component that is the same as a hardware component of the modem *(see Figure 14; Column 3: 58-65, "While the invention has utility in analyzing the performance of a software application that is executing on a distributed data processing system, its utility is not limited to such, and it has utility in analyzing the performance of computer hardware ..."; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.");* and

- executing the model of the modem comprises utilizing the hardware component *(see Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

the model of the modem comprises a hardware component that is the same as a hardware

component of the modem; and executing the model of the modem comprises utilizing the

hardware component. The modification would be obvious because one of ordinary skill in the art

would be motivated to observe and isolate undesirable modem performance and behavior *(see*

Kaler – Column 1: 33-36).

As per **Claim 37**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not

disclose:

-    debugging operation of the modem by, at least in part, observing execution of the

model with the recorded input information in non-real-time.

Kaler discloses:

-    debugging operation of the modem by, at least in part, observing execution of the

model with the recorded input information in non-real-time *(see Column 22: 50-67 to Column*

23: 1-11, "Like any debugging tool, the VSA should ensure that the debuggability of the system

cannot become a security hole. Additionally, VSA debugging is a shared resource in a

distributed environment. As such, it is important that proper security precautions be taken to

prevent malicious users from obtaining this data.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

debugging operation of the modem by, at least in part, observing execution of the model with the

recorded input information in non-real-time. The modification would be obvious because one of

ordinary skill in the art would be motivated to observe and isolate undesirable modem

performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 38**, the rejection of **Claim 27** is incorporated; and <u>Abdelilah</u> further

discloses:

- wherein the modem comprises an ADSL modem *(see Column 7: 60-63, "Similarly,*

when connected with a broadband network, the modem 310 may be a cable modem, an

Asymmetric Digital Subscriber Line (ADSL) ...").

As per **Claim 42**, the rejection of **Claim 19** is incorporated; however, <u>Abdelilah</u> does not

disclose:

- wherein the model of the modem comprises a bit-exact software model of the modem

that exactly mimics the real-time operation of the modem.

<u>Kaler</u> discloses:

- wherein the model of the modem comprises a bit-exact software model of the modem

that exactly mimics the real-time operation of the modem *(see Column 32: 57-62, "As new*

diagram elements are identified, they are added to the user's screen 370."; Column 35: 36-47,

"... so that in real time as an application is being analyzed, one block will appear, then another,

and then the interconnection between the two blocks. Blocks are dynamically added, removed,

and moved, and the interconnections between them are dynamically changed to reflect changing

conditions in the execution of the application. The diagram is kept up to date with what is really

happening.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Kaler</u> into the teaching of <u>Abdelilah</u> to include

wherein the model of the modem comprises a bit-exact software model of the modem that

exactly mimics the real-time operation of the modem. The modification would be obvious

because one of ordinary skill in the art would be motivated to observe and isolate undesirable

modem performance and behavior *(see <u>Kaler</u> – Column 1: 33-36).*

As per **Claim 43**, the rejection of **Claim 19** is incorporated; however, <u>Abdelilah</u> does not

disclose:

- wherein the playback module comprises playback software that, when executed by a

processor, causes the reading of the input information into the model of the modem.

<u>Kaler</u> discloses:

- wherein the playback module comprises playback software that, when executed by a

processor, causes the reading of the input information into the model of the modem *(see Column*

34: 5-9, "Using the VCR paradigm to control the depiction of the application performance, the

VSA can run through each of the events and correspondingly animate the application model

shown in FIG. 13 or FIG. 14.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Kaler</u> into the teaching of <u>Abdelilah</u> to include

wherein the playback module comprises playback software that, when executed by a processor,

causes the reading of the input information into the model of the modem. The modification

would be obvious because one of ordinary skill in the art would be motivated to observe and

isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

       As per **Claim 44**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not

disclose:

      -   wherein the model of the modem comprises a software component that is the same as

a software component of the modem being modeled.

       Kaler discloses:

      -   wherein the model of the modem comprises a software component that is the same as

a software component of the modem being modeled *(see Figure 14; Column 33: 15-20, "FIG.

14 illustrates various user interface features of an animated application model in an exemplary

embodiment of the invention. The user interface features are shown generally by reference

number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks

representing varying levels of detail of a hierarchical model of the application.")*.

       Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include

wherein the model of the modem comprises a software component that is the same as a software

component of the modem being modeled. The modification would be obvious because one of

ordinary skill in the art would be motivated to observe and isolate undesirable modem

performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 45**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the model of the modem comprises an actual hardware component that is the same as a hardware component of the modem being modeled.

Kaler discloses:

- wherein the model of the modem comprises an actual hardware component that is the same as a hardware component of the modem being modeled *(see Figure 14; Column 3: 58-65, "While the invention has utility in analyzing the performance of a software application that is executing on a distributed data processing system, its utility is not limited to such, and it has utility in analyzing the performance of computer hardware ..."; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to include wherein the model of the modem comprises an actual hardware component that is the same as a hardware component of the modem being modeled. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36).*

As per **Claim 46**, the rejection of **Claim 19** is incorporated; however, <u>Abdelilah</u> does not disclose:

- wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment.

<u>Kaler</u> discloses:

- wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment *(see Column 32: 57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 33: 28-31, "... users can play and replay the application execution, stop, pause, reverse, speed up, slow down, and so forth."; Column 35: 36-47, "In addition, all of the above windows can be operated to display the application performance in real time as well as "post mortem". ... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of <u>Kaler</u> into the teaching of <u>Abdelilah</u> to include

wherein the playback module comprises playback software comprising a bit-exact model of the

operation of the modem, such that any modem behaviors that occurred in real-time operation

during the period of time over which the input information was obtained will recur during

execution of the playback software in the non-real-time playback environment. The modification

would be obvious because one of ordinary skill in the art would be motivated to observe and

isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

Response to Arguments

19.   Applicant's arguments with respect to Claims 9, 13, 19, 27, 40, and 45 have been

considered, but are moot in view of the new ground(s) of rejection.

In the Remarks, Applicant argues:

a)   35 U.S.C. §101 states the "[w]hoever invents or discovers any new and useful process,

machine, manufacture, or composition of matter, or any new and useful improvement thereof,

may obtain a patent therefor, subject to the conditions and requirements of this title." (35 U.S.C.

§101). Claim 9 is directed to "[a] modem comprising..." and claims 10 through 13 are directed to

"[t]he modem of claim 9 ...." (See Applicant's claims 9-13). The Applicant appreciates the

Examiner's recognition that "[c]aims 9-13 are directed to modems." (Office Action, Page 3, Line

1). Clearly, a modem is a "machine" and/or "manufacture" under 35 U.S.C. §101. Thus, claims

9-13, which the Examiner acknowledges are "directed to modems," are a "machine" and/or

"manufacture" under 35 U.S.C. §101 and therefore, constitute statutory subject matter. Because

claims 9-13 are directed "machine" and/or "manufacture," claims 9-13 are statutory subject

matter under 35 U.S.C. §101 and therefore, rejections of claims 9-13 under 35 U.S.C. § 101

cannot be maintained.

Examiner's response:

a)   Examiner disagrees with Applicant's assertion that a modem comprising two inputs and a

recording module constitutes statutory subject matter. The specification defines a modem as a

communication device or program that enables a personal computer (PC) to transmit data over,

for example, cable or telephone lines *(see Page 7, Paragraph [18])*. Thus, under the broadest

reasonable interpretation and in light of the specification, the claimed modem can be interpreted

as either a hardware modem (device) or a software modem (program). If the claimed modem is

interpreted as a hardware modem, then the recited components of the hardware modem fail to

meet the requirements of a machine or manufacturer under § 101. As previously pointed out in

the Non-Final Rejection (mailed on 08/24/2007), the claimed modem appears to contain only

computer program modules—software *per se*. Neither the plain language of the claims nor the

specification provide any explicit and deliberate definition to indicate that a first input, a second

input, and a recording module as being hardware components.

Alternatively, if the claimed modem is interpreted as a software modem, then the claimed

invention is directed to a computer program. Such claimed computer programs do not define any

structural and functional interrelationships between the computer program and other claimed

elements of a computer, which permit the computer program's functionality to be realized.

Therefore, under either interpretation, the claims are directed to functional descriptive

material *per se*, and hence non-statutory.

In the Remarks, Applicant argues:

b)   Although irrelevant to the analysis under 35 U.S.C. §101 because the claimed modem is clearly statutory subject matter, the Office Action makes various statements asserting that the "first input," "second input" and "recording module" limitations of independent claim 9 are "software per se," "functional descriptive material per se," " computer listing per se," etc. The Applicant disagrees with the Office Action's characterization of the claim elements. For example, with regard to "[a] modem comprising...a first input that operates to receive information from a first device that is utilizing the modem to communicate with a second device through a communication network," the first input is clearly the structure within the modem that operates to receive information from a first device. "[A] first input" is not a function. Rather, "operat[ing] to receive information" is a function. The function of "operat[ing] to receive information" is performed by the structure, "a first input." Similarly, "a second input" is the structure within the modem that performs the function of "operat[ing] to receive information."

Examiner's response:

b)   Examiner disagrees with Applicant's assertion that analyzing the claimed elements is irrelevant in determining patentability of the claims under § 101 because the claimed modem is statutory subject matter. According to MPEP § 2106 (II)(A), in determining patent subject matter eligibility, "[t]he claimed invention <u>as a whole</u> (emphasis added) must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State*

Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F.3d 1368, 1373-74, 47 USPQ2d 1596, 1601-02 (Fed. Cir. 1998).

Examiner also disagrees with Applicant's assertion that the claimed elements of "a first input" and "a second input" are structures within the modem. The specification does not appear to disclose that the first input and the second input are structures within the modem. The specification only discloses that the modem receives input data and input samples *(see Page 8, Paragraph [20])*. Thus, absent an explicit and deliberate definition from the specification, the first input and the second input of the modem can be reasonably interpreted as software functions operating to receive information.

In the Remarks, Applicant argues:

c)   Additionally, "a recording module" is the structure within the modem that performs the function of "operating to cause input information...to be recorded." The Office Action cites to Paragraph 21 of Applicant's specification to show that the recording module may include hardware, software, or a combination thereof. However, although the recording module "may include.., software," that does not mean the recording module is software. Rather, as shown in the very next sentence of the Applicant's specification, "a processor on the communication device 101 may execute recording platform 103 instructions to cause the digitized input samples 105, input data 107 and commands 106 to be stored as recorded input samples, input data and commands 104." (Applicant's Specification, Paragraph 21). Thus, although the recording module may include software, the recording module is structure that performs the function of "operat[ing] to cause input information...to be recorded," as set forth in Applicant's claim 1.

Examiner's response:

c)   Examiner disagrees with Applicant's assertion that the claimed "recording module" is a

structure within the modem. As previously pointed out in the Non-Final Rejection (mailed on

08/24/2007), paragraph 21 of the specification discloses that the recording platform may include

hardware, software, or a combination thereof. Note that the statement is written in the alternative

form. Thus, the recording platform may be implemented in software alone under one possible

interpretation. Furthermore, with respect to the disclosure of a processor on the modem

executing the recording platform in the specification, note that it is the processor that executes

the recording platform to record information. Thus, the processor is the structure that performs

the functions of the recording module, not the recording module as averred by the Applicant.

According to the specification, the recording platform may be a computer program residing on

the modem and a processor on the modem executes the recording platform *(see Page 8,*

Paragraph [21]). The plain language of the claims does not recite or suggest any hardware

component of the modem to execute the recording module in order to carry out its

functionalities.

In the Remarks, Applicant argues:

d)   Further, even if "a first input," "a second input" and/or "a recording module" were

functional limitations, MPEP 2173.05(g) states that "[t]here is nothing inherently wrong with

defining some part of an invention in functional terms. Functional language does not, in and of

itself, render a claim improper. In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971)."

(MPEP 2173.05(g)).

Examiner's response:

d)   Examiner disagrees. MPEP § 2173.05(g) pertains to matters concerning whether

functional limitations of a claim comply with the requirements of 35 U.S.C. § 112, second

paragraph. MPEP § 2173 primarily pertains to guidelines concerning the treatment of claims

under 35 U.S.C. § 112, second paragraph, and not claim patentability under 35 U.S.C. § 101.

In the Remarks, Applicant argues:

e)   Also, please note that nowhere in Kaler is there any mention of the term "communication

device." Further, nowhere in the Applicant's claims does the term "communication device"

appear. Thus, the Applicant asks that the Examiner clarify why the "communication device" term

is being inserted by the Examiner in Applicant's claims. Additionally, the Applicant respectfully

requests that the Examiner examine the claims as written.

Examiner's response:

e)   Examiner has examined the claims as written. Note that Claims 19 and 27 are rejected

under 35 U.S.C. § 103(a) in the Non-Final Rejection (mailed on 08/24/2007) based on the

combination of Kaler and well-known knowledge within the computing art. Kaler discloses a

method and apparatus for analyzing the performance of a communication device (*e.g.*, a

computer system). Kaler does not disclose analyzing the performance of a modem. In

formulating the rejections, the Examiner slightly revised the wording of the claims—that is,

replaced every instance of "modem" with "communication device." Thus, such revisions would

provide a clear line of reasoning when combining the teaching of Kaler with the well-known

knowledge that a modem is a widely used communication device.

Conclusion

20.   The prior art made of record and not relied upon is considered pertinent to Applicant's

disclosure.

21.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The

Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM.

The Examiner can also be reached on alternate Fridays.

        If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

        Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/QC/
May 25, 2008

/Wei Zhen/

Supervisory Patent Examiner, Art Unit 2191